PROCEEDINGS OF THE BROWN COUNTY
LAND CONSERVATION SUBCOMMITTEE

Pursuant to Section 18.94 Wis. Stats., a regular meeting of the **Brown County Land Conservation Subcommittee** was held on Monday, February 22, 2016 in Room 161, UW Extension, 1150 Bellevue Street, Green Bay, Wisconsin.

Present: Chairman Dantinne, Supervisors Bernie Erickson, Tom Sieber, Dave Kaster, Dave Landwehr and
Absent: Citizen Rep Jeff Ronsman
Also Present: Mike Mushinski, Jon Bechle, Brent Peterson and other interested parties.

I. Call Meeting to Order.

The meeting was called to order by Chair Norb Dantinne at 6:00 pm

II. Approve/Modify Agenda.

Motion made by Supervisor Sieber, seconded by Supervisor Kaster to approve. Vote taken. MOTION CARRIED UNANIMOUSLY

III. Approve/Modify Minutes of January 25, 2016.

Motion made by Supervisor Kaster, seconded by Supervisor Erickson to approve. Vote taken. MOTION CARRIED UNANIMOUSLY.

Comments from the Public. None.

1. Departmental Openings Summary.

Motion made by Supervisor Landwehr, seconded by Supervisor Sieber to receive and place on file. Vote taken. MOTION CARRIED UNANIMOUSLY.

2. Director's Report.

Land and Water Conservation Technician Brent Petersen provided a PowerPoint (attached) re: Farm Demo Update, 2015.

Assistant County Conservationist John Bechle provided handouts (attached) regarding 2015 Wildlife Damage Abatement and Claims Programs (WDACP) Update. He informed that most of the damaged occurred was by deer and geese, Brown County had more goose damage than deer damage. Depending if conditions were good for the geese during migration, and if the crops were still standing, they could do quite a bit of damage. Last year they had a wet fall and the soybean fields had water standing which drew the geese right in. They were eating the beans. They can cause some damage on new seeding of alfalfa. And there were times of the year when they were nesting and caused problems on the greens; soybeans, wheat, corn, alfalfa. Crop prices were higher in 2014 than 2015. However, the actual claim amounts were lower in 2015 than 2014. Also noted on the handout was the info regarding Wildlife Damage Abatement and Claims Program (WDACP) shooting permits for damage situations and nuisance situations. These were 5-year permits obtained by farmers for crop damage.

Regarding the City of Green Bay Deer Management Program, the State of Wisconsin changed the law a couple years ago with archery and bow hunting and it gave the city the authority within the City of Green Bay to establish the hunting rules. What Brown County did back then was enter into a memorandum of understanding to have the county properties within the City of Green Bay be managed under that program. Hunters applied and were selected through that program. There were 13 deer harvested on the Brown County Farm property site. Landwehr questioned, in order to be eligible for

these programs, farmers had to open up their land to hunters, Bechle responded, yes. Even though that was a requirement of the damage program, there were areas where hunting by archery could not be done. Bechle also pointed out the $435.15 under assessed damage, there was no eligible claims as the program had a $500 deductible.

An additional handout was provided (attached) regarding County Deer Advisory Council, Bechle informed this was something the state started last year, there will be meetings in March and April. There were councils in every county in the state. The handout was the template of the agenda. Brown County's meeting was tentatively scheduled for March 23rd at Barkhausen starting at 6:30pm. The DNR will advertise it.

No action taken.

Other

3. Such Other Matters as Authorized by Law.

4. Adjourn.

Motion made by Supervisor Erickson, seconded by Supervisor Landwehr to adjourn at 6:35 p.m. Vote Taken. MOTION CARRIED UNANIMOUSLY.

Respectfully submitted,

Alicia A. Loehlein
Recording Secretary

Farm Demo Update 2015

From: Brent Petersen 1-20-2016

What is the deal with cover crops and soil improvement?!

So here is today's cropping practice. We know this system well, but can we improve our systems! Soils are much more delicate than we realize!

So here are our delicate systems!

If we don't leave the structure alone it is destroyed! In nature tillage is a catastrophic event!

Here is our no till cover crop plot planted (Paul VanGheem cooperator) into harvested wheat. The field on the top side of the picture is the same field but it was worked. You can see a distinct suspended solids line of runoff from the worked field vs. the no tilled field.

The picture far upper left is Weise Brothers Farm. This field is well over 100 acres. The field on the upper right has been fall tilled corn silage and is just under 25 acres.

The field in the upper left was winter wheat that was harvested in August 2015. Liquid manure was incorporated applied and a diverse cover crop was planted. The cover crops goal is to absorbed the manure and stabilize the soil going into fall and winter. The plan is to no till corn in the spring of 2016.

The clear water (cover crop field) vs dirty water (tilled field) in lower picture tells the story after 3.5" of rain on Dec 13 2015.

The field on the right, (VanWychen Farms) is a alfalfa field that will have no till corn in 2016.
The field on the left, (Neighbor) is a field that was conventionally tilled and is nearing corn silage maturity.
Even after the corn is almost mature; you can see the suspended soil particles in the water.
The field on the right has soil structure, which minimizes suspended solids in the water.

The field on the right (in essence) has been no tilled for 3 years already. The timing is right to no till corn in 2016.

The Fox River and Bay of Green Bay after rainfall event. Does anything look familiar?

Paired Watershed – Two sites constructed with help from EPA, GLC (The great lakes commission) and USGS (United States geological survey).

Site is located on Lost Dolphin Rd
(New Horizons Dairy) Dave Vande Hey

Paired Watershed each subbasin is approx. 5 acres each.

The plan is to start soil improvement practices in Fall of 2016.

4.9 acres North

5.1 acres South

After .4 inches of rain on 6-12-2015. Last significant event was 5-31-2015

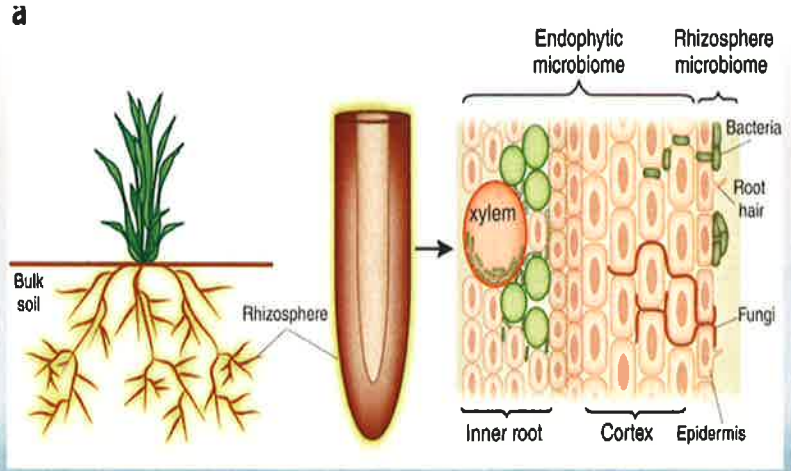
What kind of infiltration rates do we have here?!

Picture taken 9-8-15 south site. Total rainfall 1.94 inches at this site.

What would happen if infiltration rates were at 2 inches/hr?!

So how can we combat sediment and nutrient movement. Might cover crops and no till assist us? Also how do we get there!

We grow cover crops to harvest sunlight and feed the biology within the soil. These crops supply sugars to the biology, intern the biology supply's water and nutrients to the plant creating a symbiotic relationship.



Cover crops supply sugars, proteins, and exudates (signaling compounds) to the soils biology. These different forms of biology create a natural glue call glomalin (mainly from mycorrhizal fungi). This glue helps hold soil particles together minimizing sediment movement.
* An example of this is rhizobia and nodulation on alfalfa.

Ex. Here is an example of just one of the symbiotic relationships that goes on with the root of an alfalfa or any legume.

The Rhizobium is attracted to a signaling compound put out by the alfalfa root. The rhizobium infect the root and the creation of nitrogen producing nodules begins.

If Rhizobium aren't present how would that affect legumes?

My point is these systems work together

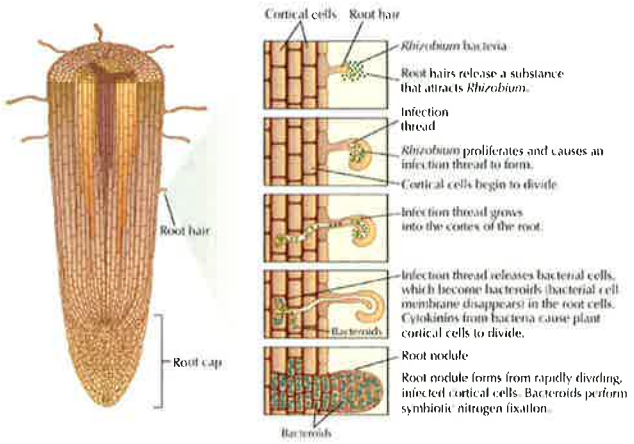
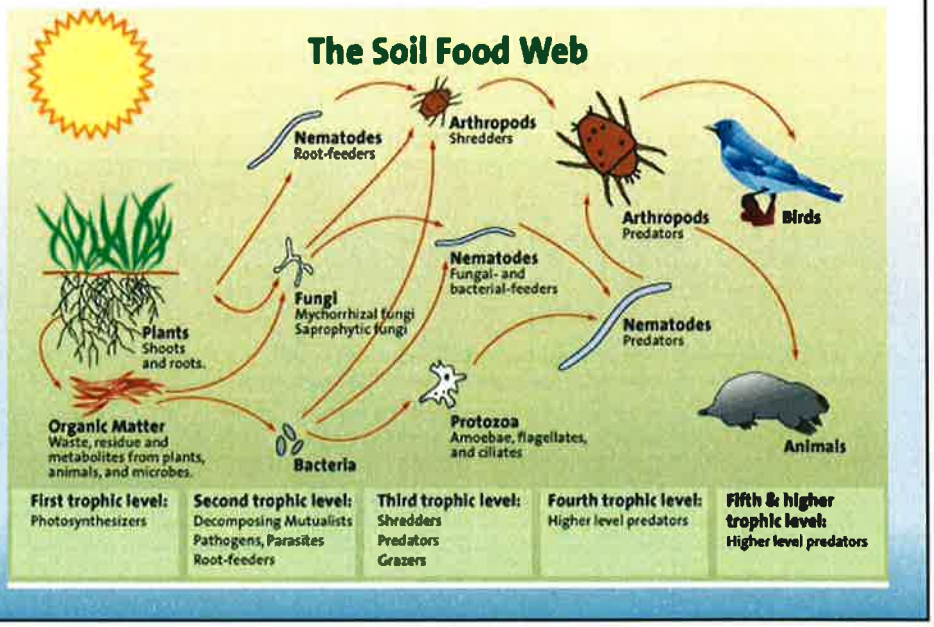


FIGURE 6.26. Symbiosis of *Rhizobium* bacteria with legumes.

Evolution © 2007 Cold Spring Harbor Laboratory Press

A soil without biology is geology! If I eliminate the (food source) organic matter from this web what will happen? So what can we do to help this food web?



Frost Seeding into Winter Wheat

Greg Nettekoven frost seeded red clover into his (fall of 2014) winter wheat in the first part of March 2015. The red clover was seed broadcast (commercial applicator) at 10 lbs/ac with urea and ammonium sulfate. The lower left two pictures show establishment of winter wheat and red clover. The winter wheat and red clover looked great all season. The following pictures show the progression throughout the season. Moxy 2e was used for broadleaf control.

Pictures taken on 5-14-15

Picture taken 7-21-15

Below left is shows the red clover establishment. The establishment of the stand was real good on 95% + of the field by the end of the season (lows were hurt a little which can be expected). The final winter wheat yield was 95 bu/ac. Greg didn't seem to think that the red clover hurt the wheat yields and I tend to agree with him. This field looked strong all year.

Picture taken 7-21-15

Picture taken 8-4-15

The following pictures show progression of the Red Clover throughout the season. So, what kind of nitrogen credit did we gain for the 2016 corn crop. Book estimates would say anywhere from 80 to 120 lbs of stable nitrogen plus any intangibles (biologic activity, slow release, infiltration etc.). The plan is no till corn in 2016.

Roundup and 2-4D application with 20-22"s of growth.

Picture taken 10-1-15

Picture taken 12-7-15

Brickstead Dairy – Alfalfa field conversion to no till corn field, with liquid manure.

The field below (same field) was alfalfa. Before 3rd cut the field was sprayed of with Roundup and then harvested. A diverse 5+ species cover crop mix was no till planted and you can see it growing in the picture below. The mixture consists of radish, cereal rye, red clover, crimson clover, rape seed, and others.

WE NEED TO FEED THE BIOLOGY, SO THEY CAN WORK THEIR MAGIC!!

Here is the same Brickstead field with the diverse cover crop. The photo to the right is a picture of a low disturbance manure application. This applicator (Bazooka made by Farm Star) is made for manure applications under 15,000 gls/ac without runoff. The unit is Outagamie County LWCD's which was purchase through a grant. This unit is available to producers for a minimal fee/ac.

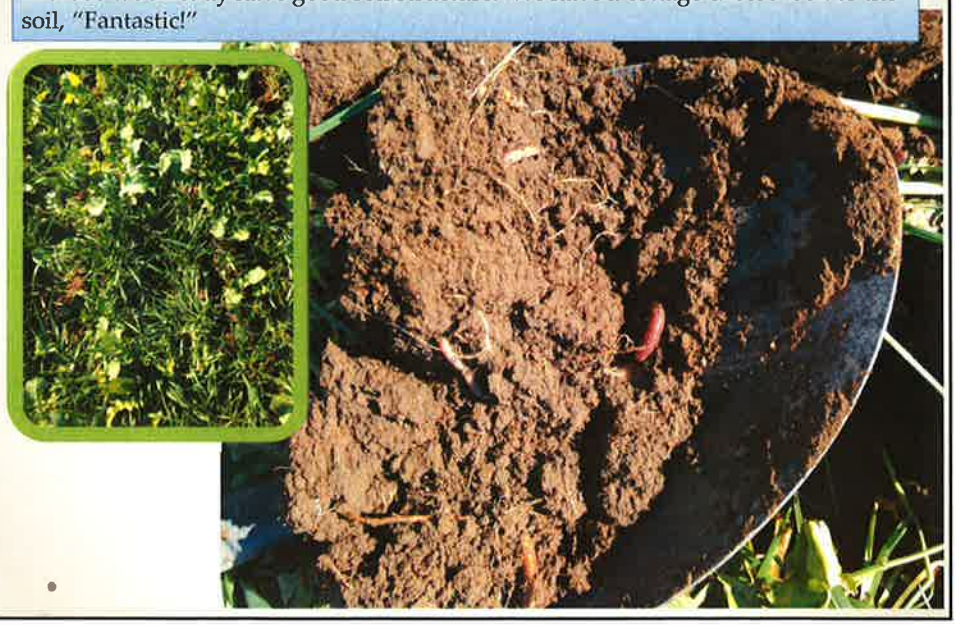
Here is soil from the same field as the previous slide. This soil is really coming alive! We have all the things the biology needs to feed itself! Keep in mind we had an application of 10,000gls of manure, (Bazooka applicator) without destroying the soil structure or killing the soil biology.

We have live roots pumping sugars and proteins down to root system; the significance of that, is the roots exude these sugars and proteins out of the root system. Plus we have Mycorrhizal fungi (yellow arrow) which help break down dead material in the soil and supply digestate to earthworms etc. Something not always seen in conventional practices.

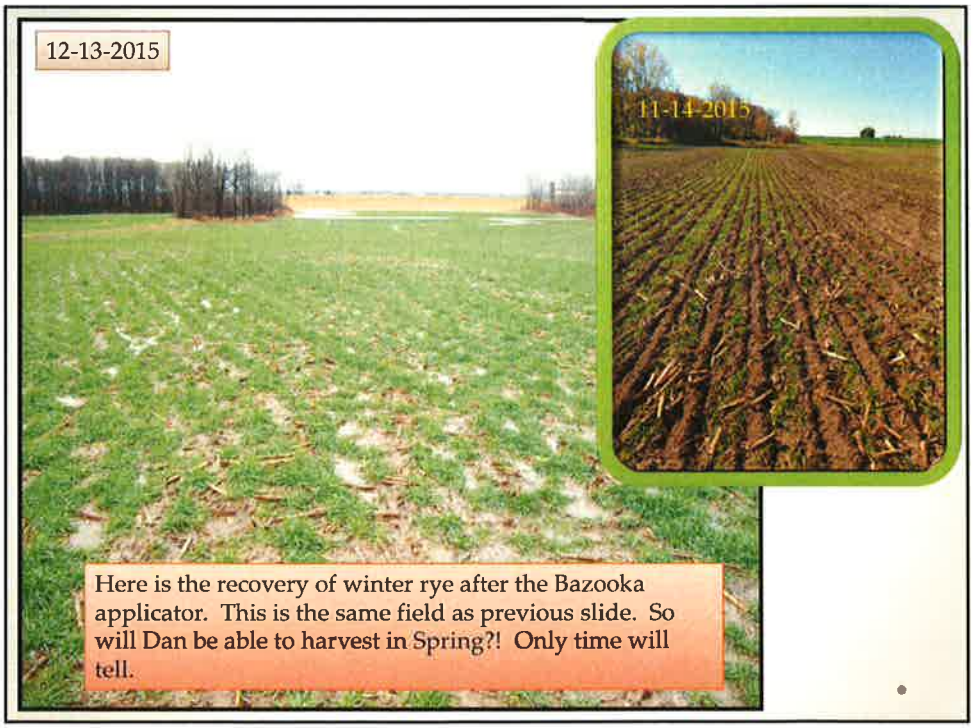
Jill Clapperton, a soil health consultant and co-founder of Rhizoterra International in Florence, Mont.

Clapperton says. "Fungi loosen up the complex carbon structure in the material and make it easier to eat. They need a high-quality food stock with carbohydrates and protein, and the addition of nitrogen-rich legumes balances their diet and increases their activity."

This the same Brickstead field with the diverse cover crop mix and Bazooka manure application. The Bazooka didn't seam hard on soil structure, mainly because we already have good soil structure. We have a cottage cheese look to the soil, "Fantastic!"



Brickstead Dairy = Winter Rye drilled into tilled ground followed by the Bazooka applicator. The Bazooka operation seemed to be tough on a cover crop in loose ground. With more time the cover may have helped stabilize the soil for less disturbance.



Manure application practices tried:

Bazooka low disturbance applicator by Farmstar = The pictures below show the capability of this unit. This unit will apply liquid manure up to 15,000 gls/ac. The application below is at 12,390 gls/ac. Manure is staying in place. Odor issues minimized greatly!

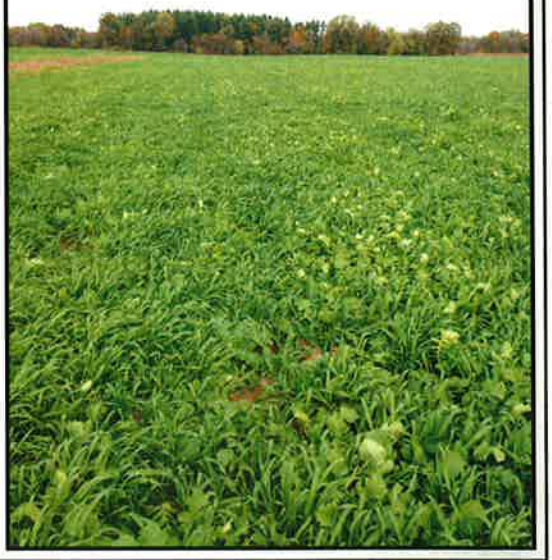
Brickstead: *Challenges of surface manure applications after cover crop establishment.* The two pictures above are of the same field. This field was tilled before planting with Winter Rye. This field was planted after corn silage. The surface manure didn't affect the cover crop but truck tracks sure did, (upper left picture). Depending on what we are looking for,

VanWychen Farms: This a broadcast seeding of barley, radish, and Austrian Winter peas. Roundup only was sprayed pre-harvest to 3rd crop alfalfa. Cover crop seed shown with blue arrows. The reason for doing this is to get Alfalfa and dandelions under control for the 2016 growing season.

After the seed broadcast, 7000 gls of liquid manure was applied. A very shallow incorporation (1-3") of liquid manure was applied, (picture on the right). In order not to bury the seed to deep shallow incorporation was needed.

The cover crop came up very well! Can we no till into this? Only time will tell, but that is the plan.(Corn in 2016) It seemed like the manure really gave the cover crop a boost with immediate moisture, plus nutrients. The condition of this field was very dry at time of seeding and manure application. The manure didn't seem to phase the cover crop seed germination at all, in fact I think it helped. Michigan St. has had a lot of luck with manure and cover crop seeding's.

10-19-2015



Inter seeding vs broadcast v-4 to v-8 corn. The University of Penn St. has done a lot of work with inter seeding. The goal is to get the cover crops planted early in the season as to not impede on harvest in the fall etc. Good soil to seed contact can be accomplished and higher volumes of biomass are created going into the winter months.

6-11-2015

VanWychen Farms cover crop inter seeded from previous slide. Below we have a combination on Barley, Radish, and Red Clover. The barley matured and died out, in the middle of August without a lot of biomass.

Vanwychens same field as 2 row inter seeding. Broadcast planted red clover, barley, and radish less than 1 week later with urea. The difference is significant.

The inter seeding was stronger throughout the season. The barley and radish didn't catch real well where the seeds were broadcast. The red clover did have some success with the surface establishment.

Brickstead Dairy: Inter seeding of straight Red Clover at 12#'s/ac.
Planted the week of June 21st 2015. The red clover did very well during the season. During wetter conditions later in the summer we did have some powdery mildew (type of fungus) present, but the Red Clover came out of it.

Greg Nettekoven: Inter seeding Pictures.
Greg had an extremely dense canopy of corn, (hardly any sunlight penetration).
Far Left = Straight red clover
Middle = Barley, red clover, and radish – Barley already died out limited residue.
Far Right = Barley, radish, and red clover - Lack of water hurt this stand

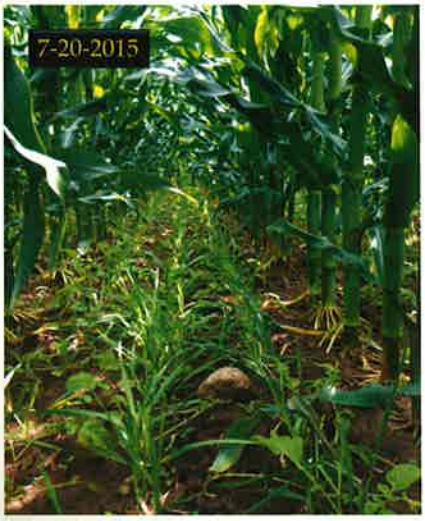
Greg Nettekoven: This is a close up of the broadcast surface seeding's from the previous page. These may work better with more moisture. Timing is everything with surface applications.

We are looking for biomass production for the following year. Will we get that here?? Time will tell.

Tinedale Farms: Here is what the inter seeded red clover looked like after corn silage harvest. The stand held up real well after the harvest traffic. This should be a real nice stand come spring.

Tinedale Farms inter seeding

Planted the week of June 21st 2015, Barley, Radish, and Red Clover



Broadcast spinner high boy same day with nitrogen week of June 21st 2015 Day??

These are pictures of the last slide, broadcast application. One month after application we have some germination and also non germinated seeds. The blue arrows are non germinated barley seed.

Tinedale farms: Very nice looking stands with the inter seeder, but the time need to plant can be a factor. This is a great choice if you are applying 28% nitrogen side dress because you can kill two birds with one stone. Larger equipment is a must if you are going to inter seed this way.

Tinedale Farms: Oats and radish planted in the early fall of 2014. Vertical tillage was done on most of the field, with no-till on part of the field. The oats has a higher carbon content, so it is important to have early nitrogen present with this type of operation.
Producers must be careful to try not to work this much too high carbon biomass into the soil. The bacteria once exposed to high amounts of oxygen with deplete nitrogen supplies quickly and the corn will become nitrogen deficient. We want a slower breakdown of the carbon if possible, no-till will allow for slower breakdown which will regulate carbon breakdown over a longer period of time. This will allow for a cooler soil during the season and keep moisture in the soil profile, for later use!

One of the key issues to no-till in the past, was row closer for good soil to seed contact. Tinedale farms has the row closer equipment to do the job. With proper equipment the soil closing issue can be greatly minimized.

Below are pictures of vertical tillage vs no-till. The closer was great in both plantings which is the key to yield down the road!

Figure A: Scott is planting down the divide in the field of vertical till on the left and no till on the right.
Figure B: This shows the corn establishment one month later. The stand is off to a great start. We are looking for no gaps between plants and even emergence for the best stand. Field conditions change daily so we need to pay attention to the nitrogen program especially in the first years of this type of system. Since our soils are not conditioned to this type system yet, we need more nitrogen up front to help with the soils conversion.

5-6-2015 Figure A

6-10-2015 Figure B

Here is the plant placement in the no till part of this field. The stand looked great no emergence issue noted. We are looking for all the corn to emerge at the same time if at all possible, (no lagging plants!)

The plant emergence looked very even throughout the field.

9-29-14

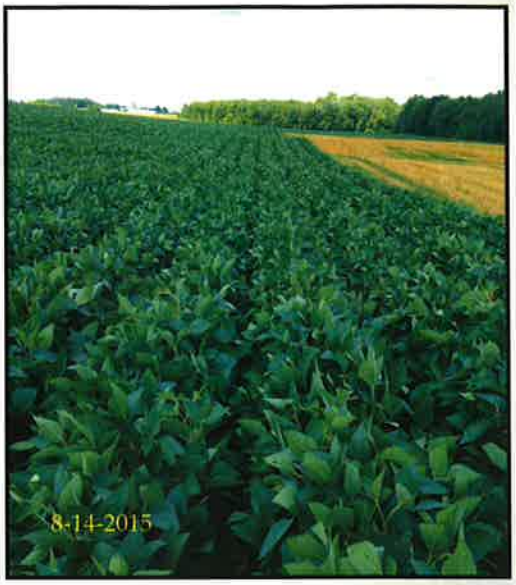
Greg Nettekoven

Triticale, berseem clover and radish's planted in the Fall of 2014. This cover crop mixture follows winter wheat. This was the beginning of no till with cover crops as part of the farm demo network.

Here is the following spring. Greg had a real nice stand of triticale, the berseem clover didn't take very well for some reason. Glyphosate applied at 16" tall. You can see the difference with the check strip.

Greg no till planting soybeans 5-26-15. This is almost two weeks after the Glyphosate application.
Great seed closer and depth! Greg had to make additions to his current 8 row planter the make this system work. Greg had over $22,000 in additions to make this work.

Soybean progression throughout the year. Nice color though out the year!



Same field as previous slide. We have a food source!!

Now organisms like earthworms, nematodes, protozoa, fungi, bacteria and different arthropods can go to work!

Earthworm middens upper left and earthworm hole upper right.

Nearing harvest

Greg ended up with a yield of 57 bu here.

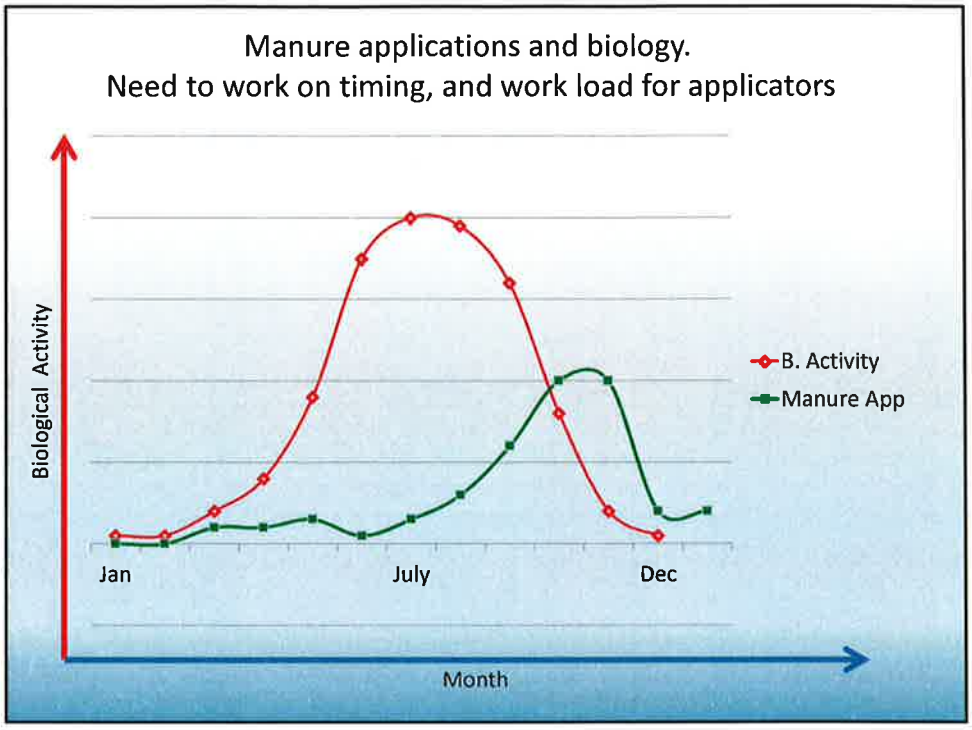
If you look close hardly any of the original existing residue is left over from the initial triticale, berseem clover and radish cover crop.

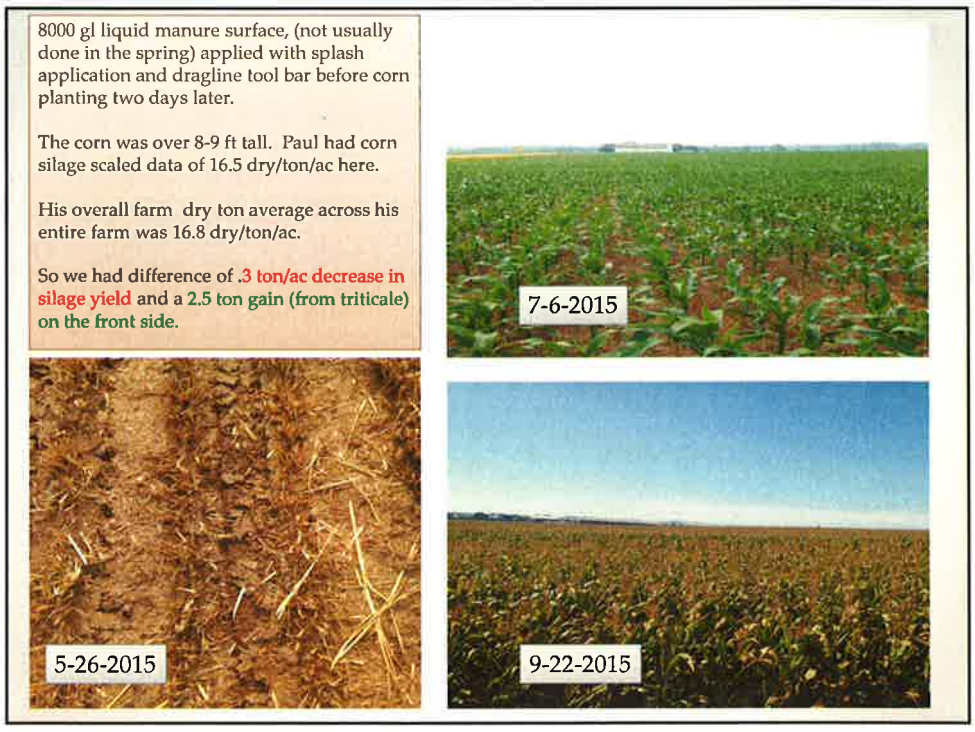
If you look even closer you can see the soybean leaf midden piles created by the earthworms again! So, the biological cycle continues!

10-1-2015

Wayside Dairy - Triticale harvested (2.5 ton/ac dry matter. Est value $200/ac), manure applied and corn planted in 15" rows.

Great fibrous root system leftover from triticale. This really helps the soil structural properties


Manure applications and biology.
Need to work on timing, and work load for applicators
Biological Activity
Jan
July
Dec
Month
B. Activity
Manure App


8000 gl liquid manure surface, (not usually done in the spring) applied with splash application and dragline tool bar before corn planting two days later.
The corn was over 8-9 ft tall. Paul had corn silage scaled data of 16.5 dry/ton/ac here.
His overall farm dry ton average across his entire farm was 16.8 dry/ton/ac.
So we had difference of .3 ton/ac decrease in silage yield and a 2.5 ton gain (from triticale) on the front side.
7-6-2015
5-26-2015
9-22-2015

Picture right shows the cottage cheese look at the soil surface. You can see all the earthworm castings on the surface.

Inter seeding plans for 2016 season.

Combining systems = *Lilliston rolling cultivator, Penn St. inter seeding rows units, Valmar air seeder, and 28% side dress applicator.*


Thank You!

2015 Wildlife Damage Abatement and Claims Program (WDACP) Update

*2015 WDACP Claims

16 Participants; 7 Claims filed

2015 COUNTY CROP DAMAGE REPORT

Enrollment Year: 2015 Enrollment County: Brown Species: [All Species] Run Report

Export to Excel

Crop	No. of Claims	Assessed Damage	Appraised Acres	Damaged Acres	Loss on Yield
Alfalfa	5	$11,595	385.4	148	115.95
Corn Grain	3	$4,029.2	99.8	12.5	1,151.2
Other	1	$3,451.5	31	5	19.5
Soybeans	4	$8,952.2	136.5	34	1,053.2
Total		$28,027.9	632.7	199.5	2,339.85

Assessed Damage	Eligible Claims	Status	Acres Appraised	Acres Damaged	Deer Damage	Deer Acres	Bear Damage	Bear Acres	Turkey Damage	Turkey Acres	Goose Damage	Goose Acres
$1,096.5	$596.5	PENDING	15	3	$0	0	$0	0	$0	0	$1,096.5	3
$2,910	$2,410	PENDING	83.9	37	$0	0	$0	0	$0	0	$2,910	37
$3,451.5	$2,951.5	PENDING	31	5	$3,451.5	5	$0	0	$0	0	$0	0
$3,118.5	$2,618.5	PENDING	77	20	$2,426.68	12.65	$0	0	$227.82	1.75	$464	5.6
$8,460.2	$7,368.16	PENDING	268.3	89	$3,040.2	12	$0	0	$0	0	$5,420	77
$8,556.05	$7,444.84	PENDING	130.5	40	$0	0	$0	0	$0	0	$8,556.05	40
$435.15	$0	PENDING	27	5.5	$435.15	5.5	$0	0	$0	0	$0	0
$28,027.9	$23,389.5		632.7	199.5	$9,353.52	35.15	$0	0	$227.82	1.75	$18,446.55	162.6

*2015 WDACP Shooting Permits

Deer – 5 permits, 37 deer harvested

Turkey – 1 permit, 8 turkeys harvested

*2015 City of Green Bay Deer Management Program

13 deer harvested on Brown County Farm property sites

County Deer Advisory Council

March 2016 Meeting Agenda

WISCONSIN
DEPT. OF NATURAL RESOURCES

The council will review and act on items listed on this agenda.

ORDER OF BUSINESS

1. Organizational Matters - *Chair*
   a. Call to order
   b. Roll call
   c. Agenda approval or repair
   d. Review the CDAC Charter
   e. Review meeting and discussion etiquette

2. Review of 2015 deer season results and quota setting process - *Wildlife liaison*

3. Public appearances/comments
   (Citizens who wish to speak to the council must sign up at the meeting prior to the beginning of the meeting. Comments will be limited to 3 minutes for each speaker.)

4. 2016 Deer Season Recommendations
   a. Determination of preliminary quota and permit recommendations
   b. Determination of additional season options, if available, in the county.
   c. Complete Preliminary 2016 Deer Harvest Quota and Permit Recommendation Form

5. County specific issues/concerns

6. Council member matters

7. Adjournment

County Deer Advisory Council Charter

- **Gather public opinion on deer populations and goals, antlerless quotas and herd management strategies.**
- **Review and consider scientific metrics on deer herd trends, impacts to habitat and agriculture and human-deer interactions.**
- **Provide the department with recommendations on deer population objectives, antlerless quotas and herd management strategies.**